WE CLAIM:

1. A nucleic acid sequence, coding for a polypeptide having creatinine deiminase activity, selected from the group consisting of:

a) the nucleic acid sequence as shown in SEQ ID NO:1 or a fragment or a derivative thereof;

(b) a nucleic acid sequence capable of hybridizing to the nucleic acid sequence of (a) and/or having at least 50% homology to (a); and

(c) a nucleic acid sequence having a degenerated form of the nucleic acid sequence according to (a) or (b).

2. The polypeptide of claim 1 having creatinine deiminase activity and does not deaminate cytosine.

3. The nucleic acid sequence of claim 1, wherein the nucleic acid sequence is derived from *Tissierella creatinini.*

4. A nucleic acid sequence, wherein the nucleic acid sequence is complementary to the nucleic acid sequence of claim 1.

5. The nucleic acid sequence according to claim 1, wherein the nucleic acid sequence comprises DNA or RNA.

6. A recombinant molecule, comprising a nucleic acid sequence according to claim 1.

7. A recombinant molecule according to claim 6, wherein the recombinant molecule is a vector or a plasmid.

8. The recombinant molecule according to claim 7, wherein the vector is a viral vector or a bacteriophage.

9. The recombinant molecule according to claim 6, further comprising an expression control sequence, said sequence controling the expression of the nucleic acid sequence.

10. The recombinant molecule according to claim 9, wherein the expression control sequence is homologous or heterologous to the nucleic acid sequence.

11 The recombinant molecule according to claim 9, wherein the expression control sequence comprises a promoter.

12. The recombinant molecule according to claim 9, wherein the expression of the recombinant molecule is controllable.

13. The recombinant molecule of claim 6, further comprising a nucleic acid sequence coding for a polypeptide, wherein the sequence controls secretion of the polypeptide.

14. A host cell comprising a molecule according to claim 6.

15. The host cell of claim 14, wherein the cell is selected from the group consisting of a prokaryotic cell, a yeast cell, an insect cell, a plant cell and a mammalian cell.

16. The host cell according to claim 15, wherein the prokaryotic cell is selected from the group consisting of *Escherichia coli* and *Bacillus subtilis*.

17. The host cell of claim 14, wherein the nucleic acid sequence is expressed in the host cell.

18. A host cell according to claim 17, wherein the polypeptide encoded by the nucleic acid sequence is secreted.

19. A polypeptide encoded by a nucleic acid sequence according to claim 1.

20. A polypeptide having creatinine deiminase activity, wherein the polypeptide comprises the amino acid sequence shown in SEQ ID NO:2, or a fragment or a derivative thereof.

21. An antibody that specifically reacts with a polypeptide of claim 19.

22. The antibody of claim 21, wherein the antibody is a monoclonal antibody.

23. A method for preparing a polypeptide having creatinine deiminase activity, said method comprising expressing in a host cell molecule according to claim 1 and isolating the polypeptide from the host cell.

24. The method according to claim 23, wherein isolating the polypeptide further comprises precipitating the polypeptide via ammonium sulphate and subjecting the polypeptide to chromatography using a sepharose containing column.

25. A method for determining creatinine concentration in a sample, comprising:

(a) reacting the creatinine with a polypeptide of claim 19; and

(b) determining the amount of ammonia formed in step (a).

26. The method of claim 25, wherein the sample comprises a body fluid.

27. The method of claim 26, wherein the body fluid is plasma, serum or urine.

28. The method according to claim 25, wherein determining the amount of ammonia further comprises reacting the ammonia with glutamate dehydrogenase in the presence of α-ketoglutarate and an electron acceptor and measuring the consumption of the electron acceptor.

29. The method according to claim 28, wherein the electron acceptor is NADH or NADPH.

30. The method according to claim 28, wherein measuring the consumption of the electron acceptor is performed using photometric measurement at 340 or 365 nm.

31. A kit for determining creatinine concentration in a sample, said hit comprising:

(a) a nucleic acid sequence of claim 1 or a host cell of claim 14 or a polypeptide according to claim 19; and

(b) a reagent for determining the amount of ammonia formed in the sample.